CLASSIFICATION:

UNCLASSIFIED

XHIBIT R-2, RDT&E Budget Item Justification											
					February 2004						
			R-1 ITEM NOMEN	CLATURE	•						
′ / BA-5			0604512N Shipbo	ard Aviation Syster	ms						
FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009					
24.311	23.586	28.631	33.097	31.486	22.127	21.344					
22.380	18.148	28.631	33.097	31.486	22.127	21.344					
1.931	3.955										
	1.483										
	24.311	FY 2003 FY 2004 24.311 23.586 22.380 18.148 1.931 3.955	FY 2003 FY 2004 FY 2005 24.311 23.586 28.631 22.380 18.148 28.631 1.931 3.955	FY 2003 FY 2004 FY 2005 FY 2006 24.311 23.586 28.631 33.097 22.380 18.148 28.631 33.097 1.931 3.955	FY 2003 FY 2004 FY 2005 FY 2006 FY 2007 24.311 23.586 28.631 33.097 31.486 22.380 18.148 28.631 33.097 31.486 1.931 3.955 33.097 31.486	R-1 ITEM NOMENCLATURE 0604512N Shipboard Aviation Systems FY 2003 FY 2004 FY 2005 FY 2006 FY 2007 FY 2008 24.311 23.586 28.631 33.097 31.486 22.127 22.380 18.148 28.631 33.097 31.486 22.127 1.931 3.955					

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This Navy unique project addresses the System Development and Demonstration (SDD) of all systems required to recover and launch Navy/Marine Corps aircraft (fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL) operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program includes the concept exploration and the development phase of the following systems under Projects W2232, and Project W9071 including the funding of Production Representative Models (PRM):

- (U) Virtual Imaging System for Approach and Landing (VISUAL): VISUAL provides ship's force and Landing Signal Officer (LSO) with enhanced images of the aircraft during recovery operations in low visibility, day and night conditions.
- (U) Moriah Wind System (MWS): Integrated digital wind measurement designed to replace the Type F wind system on all U.S. Navy air capable ships.
- (U) Advanced Arresting Gear (AAG): The AAG replaces the MK7 arresting gear, which has reached the limits of its operating capability.
- (U) Cost Reduction and Effectiveness Improvement Initiative (CREI) Aircraft Carrier Arresting Gear Hydraulic Fluid: This program seeks to replace the unique hydraulic fluid, ethylene glycol, used in the arresting gear systems with a commercially available ethylene glycol product. The commercial product will be less expensive, contain system component protection and will reduce the life cycle cost of the system.
- (U) Shipboard Aviation Data Management System Initiative: This initiative will use state-of-the-art information technology and decision support systems to automate the current manual intensive process in collecting and distributing information to enable aviation operations on board aircraft carriers to be accomplished in a more efficient and effective manner.
- (U) Machine Vision Confirmation of Launch Bar Engagement: This Phase III SBIR will be used for the testing of a shipboard demo. This would include a full system on one catapult for a period of at least six months. Reliability testing would also be conducted prior to installation. This is a follow-on to an initial Phase II SBIR project entitled "Autonomous Launch Bar Seating Check Machine Vision Confirmation of Launch Bar Engagement".

R-1 SHOPPING LIST - Item No.

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Exhibit R-2, RDTEN Budget Item Justification (Exhibit R-2, page 1 of 24)

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE:	
							Februa	ry 2004
APPROPRIATION/BUDGET ACTIVITY								
RDT&E, N / BA-5	0604512N Shipbo	ard Aviation Systen	ns	W2232 CV Launch & Recovery Systems				
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		22.380	18.148	28.631	33.097	31.486	22.127	21.344
RDT&E Articles Qty		4						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This Navy unique project addresses the System Development and Demonstration (SDD) of all systems required to recover and launch Navy/Marine Corps aircraft [fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL)] operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program includes the system development phase of the following systems under Project W2232, including the funding of production representative models (PRM):

- (U) Moriah Wind System (MWS): MWS replaces current analog wind system with an integrated digital wind measurement system which will be an affordable, LAN compatible, wind suite for all classes of air capable Navy ships.
- (U) Virtual Imaging System for Approach and Landing (VISUAL): VISUAL provides ship's force and Landing Signal Officer (LSO) with enhanced images of the aircraft during recovery operations in low visibility, day and night conditions.
- (U) Advanced Arresting Gear (AAG): The AAG replaces the MK7 arresting gear, which has reached the limits of its operating capability.
- (U) Cost Reduction and Effectiveness Improvement Initiative (CREI) (Aircraft Carrier Arresting Gear Hydraulic Fluid): This program seeks to replace the unique hydraulic fluid, ethylene glycol, used in the arresting gear systems with a commercially available ethylene glycol product. The commercial product will be less expensive, contain system component projection, and will reduce the life cycle cost of the systems.

R-1 SHOPPING LIST - Item No.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			February 2004	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND N	IAME	
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	W2232 CV Launch & Recovery Systems		

(U) B. Accomplishments/Planned Program

VISUAL	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.650	1.918	
RDT&E Articles Quantity	2		

VISUAL

Completed fabrication of two (2) CV/CVN PRM units and conducted integration/test efforts. Provided engineering and management support to the program.

Delivered two (2) CV/CVN PRM units. Complete environmental/EMI/R&M lab and conduct landbased/shipboard developmental testing. Provide engineering and management support to the program. Complete CV/CVN system operational testing. Conduct MS C for CV systems.

MWS	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.827	0.250	
RDT&E Articles Quantity	2		

MWS

Completed CDR and delivered two (2) MWS PRM. Initiate and complete developmental testing. Receive MS C and FRP approval. Provide engineering and management support for the program.

CREI	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.184		
RDT&E Articles Quantity			

CREI

Conducted PDR for Commercial Arresting Gear hydraulic fluid in support of Cost Reduction & Effectiveness Improvement Initiative (CREI).

Initiated developmental testing of commercial Arresting Gear recyclable hydraulic fluid. Conducted dead-load testing on selected alternative hydraulic fluids. Transitioned the program to production and fleet use.

R-1 SHOPPING LIST - Item No. 111

UNCLASSIFIED Exhibit R-2, RDTEN Budget Item Justification (Exhibit R-2, page 3 of 24)

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justific	ation		DATE:
			February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND N	AME
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	W2232 CV Launch & Recove	ery Systems
RDI&E, N / BA-5	0604512N Shipboard Aviation Systems	W2232 CV Launch & Recove	ery Systems

(U) B. Accomplishments/Planned Program

AAG	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	12.719	15.980	28.631
RDT&E Articles Quantity			

AAG

Completed AoA and Technology Maturity Assessment. Prepared and received approval for Acquisition Strategy. Prepared and released RFP to Industry.

Conduct source selection efforts. Prepared for and received milestone A approval and awarded Technology Development (TD) contract(s). Complete System Requirements Review.

Initiate system design efforts for AAG to include modeling and simulation and trade studies. Complete Preliminary Design and Integrated Baseline Reviews. Select SDD phase contractor.

Receive MS B approval and award SDD contract. Initiate Critical Design Review. Provide engineering and management support to the program.

CLASSIFICATION:

				February 2004
PPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AN	ID NAME
DT&E, N / BA-5	0604512N Shipboard Aviation Systems		W2232 CV Launch & Re	ecovery Systems
(U) C. PROGRAM CHANGE SUMMARY:				
(U) Funding:	FY 2003	FY 2004	FY 2005	
Previous President's Budget:	24.075	18.352	25.255	
Current President's Budget	22.380	18.148	28.631	
Total Adjustments	-1.695	-0.204	3.376	
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions	3	-0.204		
Congressional rescissions				
SBIR/STTR Transfer	-0.338			
Economic Assumptions			-0.074	
Reprogrammings	-1.357			
Sponsor/FMB/NAVAIR Adjustments				
Reprioritization			3.450	
Congressional increases				
Subtotal	-1.695	-0.204	3.376	

VISUAL program slipped due to technical challenges on CV unit. These challenges have caused the following modifications to the VISUAL effort: VISUAL TRR scheduled for 4Q/02 has been changed to 3Q/03; DT scheduled for 1Q-3Q/03 has been changed to 3Q/03-1Q/04; TECHEVAL scheduled for 2Q-4Q/03 has been changed to 4Q/03-1Q/04; Operation Testing scheduled for 2Q/03 has been changed to 1Q/04 and OPEVAL scheduled for 1Q/04 has been changed to 1Q-2Q/04. Delivery of CV EDM Shipboard Unit was delayed from 1Q/03-3Q/03. Delivery of CV EDM Lab Unit was delayed from 1Q/03-4Q/03. VISUAL L Class development was cancelled due to cost overruns in the CV program.

AAG program slipped due to minor delay in Source Selection process. This resulted in the following changes: Milestone A scheduled for 3Q/03 has been changed to 4Q/03 and Contract Award scheduled for 3Q/03 has been changed to 4Q/03. The following changes were made to test and evaluation milestones to more accurately reflect the program of record: Developemental testing scheduled for 3Q/07-4Q/07 has been changed to 3Q/07-1Q/08 and Development Test/Operational Assist scheduled for 1Q/09-4Q/09 to 2Q/09-3Q09

(U) Technical:

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:							
								Februa	ry 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM EI	LEMENT NUM	BER AND NAM	ЛE	PROJECT NU	MBER AND N	AME		
RDT&E, N / BA-5	0604512N Sh	0604512N Shipboard Aviation Systems W2232 CV Launch & Recove				very Systems			
(U) D. OTHER PROGRAM FUNDING SUMMARY: <u>Line Item No. & Name</u>	<u>FY 2003</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To <u>Complete</u>	Total <u>Cost</u>
OPN (Aircraft Launch & Recovery Equipment, 43SJ) Related RDT&E: P.E. 0603512N (Carrier Systems Development)	18.598	20.127	21.275	30.028	30.738	31.002	32.165	28.780	212.713

(U) E. ACQUISITION STRATEGY:

MWS: The Navy has prepared a performance specification and competitively awarded an IDIQ contract to cover SDD (CPIF) and production requirements (FFP).

VISUAL: The Navy prepared a performance specification and competitively awarded a cost plus incentive fee contract to develop/deliver PRMs, with fixed-price successive target production options. LH system development is a contratual option

AAG: The Navy will competitively award up to two Cost Plus Award Fee (CPAF) TD phase contracts to develop the AAG. Upon completion of the Preliminary Design and Integrated Baseline Reviews, the Navy will award a single Cost Plus Incentive Fee (CPIF) contract for the SDD phase to develop and demonstrate a production representative AAG at the NAVAIR Lakehurst Jet Car and Runway Aircraft Landing test sites. After successuful demonstration of the production representative AAG, the Navy will award Fixed Price Incentive Fee (FPIF) contracts for production quantities.

CREI: The Navy competitively awarded a prototype contract of a commercial fluid. The Navy laboratory tested commercial samples and then awarded and tested one engines worth of fluid.

CLASSIFICATION:

								DATE:				
Exhibit R-3 Cost Analysis (page	e 1)									February 200)4	
APPROPRIATION/BUDGET ACTIVITY	ΓΥ	PROGRAM E	LEMENT			PROJECT N	PROJECT NUMBER AND NAME					
RDT&E, N / BA-5		0604512N S	hipboard Aviatio	n Systems		W2232 CV La	aunch & Reco	very Systems				
Cost Categories	Contract	Performing	Total		FY 03		FY 04		FY 05			
	Method	Activity &	PY s	FY 03	Award	FY 04	Award	FY 05	Award	Cost to	Total	Target Value
	& Type	Location	Cost	Cost	Date	Cost	Date	Cost	Date	Complete	Cost	of Contract
Primary H/W Development (AAG)	C/CPAF	General Atomics/Sunnyvale	, CA	4.6	39 07/0	5.649	12/03				10.288	10.288
Primary H/W Development (AAG)	C/CPAF	Northrop Grumman/San Die	go, CA	4.3	94 07/0	5.328	12/03				9.722	9.72
Primary H/W Development (AAG)	C/CPIF	TBD						21.390	11/04	61.125	82.515	82.51
Primary H/W Development (AAG)	WX	NAWCAD, Lakehurst		0.7	75 11/0	0.530	11/03	1.137	11/04	Continuing	Continuing	
Primary H/W Development (VISUAL)	C/CPIF	DRS / Anaheim, CA	21.586	4.6	81 11/02	1.200	02/04				27.467	27.46
Primary H/W Development (MWS)	CPIF/FP	QPI / Fredricksburg, VA	1.789	1.8	36 11/02	0.249	11/03				3.874	3.874
Primary H/W Development (MWS)	WX	NAWCAD, Lakehurst		0.1	35 11/02						0.135	5
Systems Engineering	WX	NAWCAD, Lakehurst	45.612	3.9	55 11/02	3.851	11/03	2.877	11/04	Continuing	Continuing	
(MWS/CREI/VISUAL/AAG/ALRCS)												
Systems Engineering (VISUAL/MWS	WX	NAWCAD, Patuxent River	0.307								0.307	7
Systems Engineering (VISUAL)	WX	NSWC, Crane IN	1.800								1.800	
Subtotal Product Development			71.094	20.4	15	16.807	7	25.404		Continuing	Continuing	9

Remarks: A portiion of the FY03 AAG contract funding will be carried over to FY04, given the late FY03 TD contract award.

Development Support						
Software Development						
Integrated Logistics Support						
Configuration Management						
Technical Data						
Studies & Analyses						
GFE						
Award Fees						
Subtotal Support						

Remarks:

CLASSIFICATION:

								DATE:				
Exhibit R-3 Cost Analysis (pag	e 2)									February 200)4	
APPROPRIATION/BUDGET ACTIVI	TY	PROGRAM E	LEMENT			PROJECT NU						
RDT&E, N / BA-5			ipboard Aviation			W2232 CV La						
Cost Categories	Contract Method	Performing Activity &		FY 03	FY 03 Award		FY 04 Award	FY 05	FY 05 Award	Cost to	Total	Target Value
	& Type	Location	Cost		Date	Cost	Date	Cost	Date	Complete	Cost	of Contract
Developmental Test & Evaluation	WX	NAWCAD Lakehurst, NJ		0.920	11/02						0.920	
Operational Test & Evaluation	WX	NAWCAD Lakehurst, NJ				0.045	11/03				0.045	
AAG Award Fees	C/CPAF	General Atomics/Sunnyvale,	CA	0.244	07/03	0.318	11/03				0.562	0.562
AAG Award Fees	C/CPAF	Northrop Grumman/San Dieg	jo, CA	0.488	07/03	0.636	11/03				1.124	1.124
AAG Award Fees	C/CPIF	TBD						2.917	11/04	8.335	11.252	11.252
Subtotal T&E				1.652		0.999		2.917		8.335		
Program Management Support	RX	NAWCAD Patuxent Rv, MD		0.214	03/03	0.216	05/04	0.220	05/05	Continuing	Continuing	
Travel	WX	NAWCAD Patuxent Rv, MD		0.020	11/02	0.045	11/03	0.045	11/04	Continuing	Continuing	
Travel	WX	NAWCAD Lakehurst, NJ		0.080	11/02	0.081	11/03	0.045	11/04	Continuing	Continuing	
Subtotal Management				0.314		0.342		0.310		Continuing	Continuing	
Subtotal Management				0.314		0.342		0.310		Continuing	Continuing	
Remarks:												
Total Cost			71.094	22.380		18.148		28.631		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule	Profile																				DATE	:						
																							F	ebrua	ary 20	04		
APPROPRIATION/BUDGE	T ACTIVI	TY						IENT N	_			E					PROJ	ECT N	IUMBE	ER ANI	D NAM	1E						
RDT&E, N /					06045	512N S	Shipbo	ard Av	iation S	Systen	ns						W223	2 CV I	aunch	& Rec	covery	Syster	ms					
Fiscal Year		20	03			20	04			20	05			20	06			20	07			20	80			200	09	
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AAG Acquisition Milestones			M	S A				MS B																				мs с _/
Acquisition Phase					TD PI	nase			System Development &																			
Program Events		RFP	Contr	SR Act Aw	_		P	DR Optie	 on Awa	ard (1)	CD 	R \	CDR				Eqiupr	nent De	elivery		RAL	S Mod	lify/Re	furb/In	stall			
AAG Test & Evaluation Milestones			00111	3017W	<u>uiu (2</u>			<u> </u>		<u> </u>								Z	R JCT						TRR I	RALS	DT/O] XA
								R-1	SHO	PPIN	G LIS	ST - It	em N	0.	11	1												

^{*} Not required for Budget Activities 1, 2, 3, and 6

CLASSIFICATION:

Exhibit R-4a, Schedule Detail													
APPROPRIATION/BUDGET ACTIVITY	PROGRAM E	LEMENT			PROJECT NU	MBER AND N	February 20 AME						
RDT&E, N / BA-5		nipboard Aviatio	n Systems		W2232 CV La								
Schedule Profile - AAG	000101211 01	FY 2003	FY 2004	FY 2005	FY 2006			FY 2009					
TD Phase		F1 2003	F1 2004	F1 2003	F1 2000	F1 2007	F1 2006	F1 2009					
Release RFP		2Q											
Milestone A		4Q											
Contract Award		4Q											
System Requirments Review (SRR)		40	1Q										
Preliminary Design Review			3Q-4Q										
Freiininary Design Review			3Q-4Q										
SDD Phase													
MS B			4Q										
Option Award				1Q									
Critical Design Review (CDR) - Multiple CDRs				3Q-4Q	1Q								
Test Readiness Review (TRR)						2Q		2Q					
Developmental Testing (DT)						3Q-4Q	1Q						
System Mods/Refurbishment							2Q-3Q						
System Install at Runway Arrested Landing Site							4Q	1Q					
Development Test/Operational Assist								2Q-3Q					
MS C								4Q					

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EXHIBIT R4, Schedule	Profile																				DATE	:	Fe	ebrua	ry 20	04		
APPROPRIATION/BUDGE RDT&E, N /	T ACTIV	ITY				SRAM I						E							NUMBE _aunch						,			
Fiscal Year		20	03			200	04			20	05			20	06			20	07			20	008			20	09	
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
VISUAL Acquisition Milestones						MS	C/FRF						cv ~															
Prototype Phase			System	Deve	lopmei	nt & De	emons	tration					IOC Firs	l ; t	İ													
System Development	CV	Ţ			CV F	RR					С	V PCA	Dep	oloyme	nt ⁻													
EDM Delivery		S	hipboa 1	1																								
Software (delivered with system)			CV	CV																								
VISUAL Test & Evaluation Milestones Development Test		CV	TR		A &B																							
Operational Test				C	T II A	<u></u> О	T-II B																					
VISUAL Production Milestones							^																					
FY04 Option FY05 Option FY06 Option FY07 Option FY08 Option FY09 Option							<u>1</u>		<u>1</u>				5				<u></u> 4											
Deliveries											1		\triangle	1			\triangle	5			\triangle	4						
								R-1	SHO	PPIN	G LIS	ST - It	em N	0.	11	11						Evh	ibit R	_12 9	Sabar	1 2111)otoi	

CLASSIFICATION:

Exhibit R-4a, Schedule Detail													
APPROPRIATION/BUDGET ACTIVITY	PROGRAM E	LEMENT			PROJECT NU	MBER AND NA	ebruary 200 AME						
RDT&E, N / BA-5	0604512N Sh	nipboard Aviatio	n Systems			unch & Recove							
Schedule Profile - VISUAL		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009					
CV Quality Design and Build													
CV Test Readiness Review (TRR)		3Q											
CV Eng Dev Model (EDM) CV1 Delivery - Lab		4Q											
CV Developmental Testing (DT-IIA)		3Q-4Q	1Q										
CV Functional Configuration Audit (FCA)		1Q											
CV Eng Dev Model (EDM) CV2 Delivery - Shipboard		3Q											
CV Developmental Testing (DT-IIB)(TECHEVAL)		4Q	1Q										
CV Operational Testing (OT-IIA)			1Q										
CV Operational Evaluation (OT-IIB) (OPEVAL)			1Q-2Q										
CV Preproduction Readiness Review (PRR)			2Q										
CV Milestone C (MS C)			3Q										
CV Full Rate Production (FRP) Decision			3Q										
CV IOC					1Q								
CV First Deployment					1Q								
CV Physical Configuration Audit (PCA)				4Q									
			_										
			_										

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE:	
•							Februa	ry 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMI	ENT NUMBER AND	NAME		PROJECT NUMBE	R AND NAME		
RDT&E, N / BA-5	0604512N Shipbo	ard Aviation System	ns		W9071 Aviation Sh	nipboard Informatio	n Technology	
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		1.931	3.955					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This Navy unique project addresses the System Development and Demonstration (SDD) of all systems required to recover and launch Navy/Marine Corps aircraft (fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL) operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program is funded under SDD because it encompasses engineering development and demonstration of new end-items prior to production approval decision. This program includes concept exploration and system development and demonstration of shipboard aviation data management systems required to automate manual processes during aviation operations on board aircraft carriers under Project W9071:

- (U) Shipboard Aviation Data Management System Initiative: This initiative will use state-of-the-art information technology and decision support systems to automate the current manual intensive process in collecting and distributing information to enable aviation operations on board aircraft carriers to be accomplished in a more efficient and effective manner.

R-1 SHOPPING LIST - Item No.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND N	IAME
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	W9071 Aviation Shipboard I	nformation Technology

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.931	3.955	
RDT&E Articles Quantity			

Shipboard Aviation Information Technology

Developed system demonstration of flight operations, flight deck, weapons, and ALRE maintenance management functions. Complete development of Flight Deck Management, Air Operations management, V2 Maintenance Management, and Weapons Information Systems Management applications. Define hardware and develop network to run all ADMACS applications. Design interfaces for all external interfaces. Install aboard aircraft carrier for evaluation.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE:	
					February 2004
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AN	ND NAME	
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems		W9071 Aviation Shipboa	ard Information Techno	logy
(U) C. PROGRAM CHANGE SUMMARY:					
(U) Funding: Previous President's Budget: Current BES/President's Budget Total Adjustments	FY 2003 1.956 1.931 -0.025	FY 2004 0.000 3.955 3.955			
Summary of Adjustments Congressional program reductions Congressional undistributed reductions Congressional rescissions SBIR/STTR Transfer Economic Assumptions Reprogrammings Sponsor/FMB/NAVAIR Adjustments Congressional increases Subtotal	-0.025	-0.045 4.000 3.955			
(U) Schedule: Not Applicable					
(U) Technical: Not Applicable					
	D. 4. CHODDING LICT. 14		444		

CLASSIFICATION:

EXHIBIT R-2a, RDT&E	Project Justification							DATE:			
									Februa	ary 2004	
APPROPRIATION/BUDGET		PROGRAM E	LEMENT NUM	BER AND NAM	ИE	PROJECT NU	JMBER AND N	AME			
RDT&E, N /	BA-5	0604512N Sh	nipboard Aviation	on Systems		W9071 Aviation	on Shipboard Ir	nformation Ted	chnology		
(U) D. OTHER PROC	GRAM FUNDING SUMMARY:								т.	Total	
<u>Line Item No. & Na</u> Not Applicable	<u>me</u>	FY 2003	FY 2004	FY 2005	FY 2006	<u>FY 2007</u>	FY 2008	FY 2009	To <u>Complete</u>	Total <u>Cost</u>	
(U) E. ACQUISITION S	TRATEGY:										
prototype flight d	urst activity defined requirement eck management applications. software architecture and prototy	Follow on strategy to deve	lop, test, and p	produce systen	n will be deter	mined upon ide	ntification of fo	llow on funding			

CLASSIFICATION:

PROGRAM ELEMENT 0604512N Shipboard Av g Total PY's Cost Lakehurst, NJ 1. Joint Venture	FY 03 Cost 710 1.124 0.807		PROJECT NU W9071 Aviation FY 04 Cost 2.455 1.500	FY 04 Award Date	nformation Tecl	FY 05 Award Date	Cost to Complete	Total Cost 5.289 2.307 0.000)
0604512N Shipboard Av g Total PY s Cost Lakehurst, NJ 1.	FY 03 Cost 710 1.124	Award Date 01/03	FY 04 Cost	FY 04 Award Date	nformation Tecl	FY 05 Award		Cost 5.289 2.307 0.000 0.000	of Contract
g Total PY's Cost Lakehurst, NJ 1.	FY 03 Cost 710 1.124	Award Date 01/03	FY 04 Cost 2.455	FY 04 Award Date 12/03	FY 05	FY 05 Award		Cost 5.289 2.307 0.000 0.000	of Contract
PY s Cost Lakehurst, NJ 1.	Cost 710 1.124	Award Date 01/03	Cost 2.455	Award Date 12/03	FY 05	Award		Cost 5.289 2.307 0.000 0.000	of Contract
Cost Lakehurst, NJ 1.	Cost 710 1.124	Date 01/03	Cost 2.455	Date 12/03				Cost 5.289 2.307 0.000 0.000	of Contract
Lakehurst, NJ 1.	710 1.124	01/03	2.455	12/03	COST	Date	Complete	5.289 2.307 0.000 0.000	,
								2.307 0.000 0.000)
John Venture	0.607	00/03	1.500	02/04				0.000 0.000)
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1	710 1.931		3.955		0.000		0.000		
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CLASSIFICATION:

					DATE:								
Exhibit R-3 Cost Analysis (pagaPPROPRIATION/BUDGET ACTIV	ge 2)										February 200	4	
APPROPRIATION/BUDGET ACTIV	TTY TTY		PROGRAM ELE	MENT			PROJECT N	JMBER AND N	NAME		•		
RDT&E, N / BA-5			0604512N Ship		n Systems		W9071 Aviati		nformation Tech				
Cost Categories	Contract	Performing	T	otal		FY 03		FY 04		FY 05			
	Method	Activity &			FY 03	Award	FY 04	Award		Award	Cost to		Target Value
	& Type	Location	C	Cost	Cost	Date	Cost	Date	Cost	Date	Complete		of Contract
Developmental Test & Evaluation							1					0.000	
Operational Test & Evaluation												0.000	
Live Fire Test & Evaluation												0.000	
Test Assets												0.000	
Tooling												0.000	
GFE												0.000	
Award Fees												0.000	
Subtotal T&E				0.000	0.000		0.000	D	0.000		0.000	0.000	
Contractor Engineering Support												0.000	
Government Engineering Support												0.000	
Program Management Support												0.000	
Travel												0.000	
Transportation												0.000	
SBIR Assessment												0.000	
Subtotal Management				0.000	0.000)	0.000	D	0.000		0.000	0.000	
Remarks:													
Total Cost				1.710	1.931		3.955	5	0.000		0.000	7.596	
Remarks:													

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE:	
							Februa	ry 2004
APPROPRIATION/BUDGET ACTIVITY								
RDT&E, N / BA-5	0604512N Shipbo	ard Aviation Syster	ms		W9385 Machine V	of Launch Bar Engagement		
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			1.483					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This Navy unique project addresses the System Development and Demonstration (SDD) of all systems required to recover and launch Navy/Marine Corps aircraft (fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL) operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program is funded under SDD because it encompasses engineering development and demonstration of new end-items prior to production approval decision. This program includes concept exploration and system development and demonstration of shipboard aviation data management systems required to automate manual processes during aviation operations on board aircraft carriers under Project W9385:

- (U) Machine Vision Confirmation of Launch Bar Engagement: This SBIR will be used for the testing of a shipboard demo. This would include a full system on one catapult for a period of at least six months. Reliability testing would also be conducted prior to installation. This is a follow-on to an initial Phase II SBIR project entitled "Autonomous Launch Bar Seating Check Machine Vision Confirmation of Launch Bar Engagement".

R-1 SHOPPING LIST - Item No.

111

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			February 2004	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND N	AME	
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	W9385 Machine Vision Conf	irmation of Launch Bar Engagement	

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.483	
RDT&E Articles Quantity			

Refine prototype developed in Phase II. Complete development of the alignment software to automatically align the camera should the remote head be removed for maintenance. Conduct shipboard demo to include: properly installed hook-up lights, a full port and starboard system, alignment software, proof of mechanical and electronic bypass and subjecting the system to environmental testing.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:						
				February 2004					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND	NAME					
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems		W9385 Machine Vision Co	onfirmation of Launch Bar Engagement					
(U) C. PROGRAM CHANGE SUMMARY:									
(U) Funding: Previous President's Budget: Current BES/President's Budget	FY 2003	FY 2004 0.000 1.483	FY 2005						
Total Adjustments	0.000	1.483	0.000						
Summary of Adjustments Congressional program reductions Congressional undistributed reductions Congressional rescissions SBIR/STTR Transfer Economic Assumptions Reprogrammings Sponsor/FMB/NAVAIR Adjustments Congressional increases Subtotal	0.000	-0.017 1.500 1.483	0.000						
(U) Schedule:									
Not Applicable									
(U) Technical:									
Not Applicable									
•	D.1 SHODDING LIST. It	ana Nia	111						

CLASSIFICATION:

EXHIBIT R-2a, RDT&E	Project Justification							DATE:				
									Februa	ry 2004		
APPROPRIATION/BUDGET				BER AND NAM	ИΕ	PROJECT NU	IMBER AND N	AME				
RDT&E, N /	BA-5	0604512N Shipboard Aviation Systems W9385 Machine Vision Confir							firmation of Launch Bar Engagement			
(U) D. OTHER PROG	RAM FUNDING SUMMARY:								To Total			
Line Item No. & Nan	ne	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	<u>Complete</u>	Cost		
Not Applicable								· <u></u>				
(U) E. ACQUISITION ST	FRATEGY: MSE to complete prototype hardware an	d software deve	loped in the Ph	ase II effort an	d conduct a s	hipboard demor	ostration.					

CLASSIFICATION:

								DATE:					
Exhibit R-3 Cost Analysis (page 1)							February 2004					
APPROPRIATION/BUDGET AC	TIVITY	PROGRAM I	ELEMENT			PROJECT N	JMBER AND	NAME					
RDT&E, N / BA-5			Shipboard Aviation	on Systems		W9385 Mach		nfirmation of Lau	ınch Bar En	gagement			
Cost Categories	Contract	Performing	Total		FY 03		FY 04		FY 05				
	Method	Activity &	PY s	FY 03	Award	FY 04	Award Date	FY 05	Award	Cost to	Total	Target Value of Contract	
0	& Type	Location	Cost	Cost	Date	Cost	_	Cost	Date	Complete	Cost		
Systems Engineering	TBD	MSE Tech App/Butte, MT				1.483	05/04				1.483		
											0.000		
											0.000		
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												_	
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											0.000		
			0.000				_				0.000		
Subtotal Product Development			0.000	0.000)	1.483	3	0.000)	0.00	0 1.483	3	
Development Support											0.000		
Software Development											0.000)	
Integrated Logistics Support											0.000	D	
Configuration Management											0.000)	
Technical Data											0.000)	
Studies & Analyses											0.000)	
GFE											0.000	D	
Award Fees											0.000	D	
Subtotal Support			0.000	0.000)	0.000	D	0.000)	0.00	0.000)	
Remarks:													
			R-1 SHOE	PPING LIST	- Item No	111							

CLASSIFICATION:

									DATE:				
Exhibit R-3 Cost Analysis (pag	je 2)						February 2004						
APPROPRIATION/BUDGET ACTIV	ITY		PROGRAM ELEMEN	IT			PROJECT I	IUMBER AND	NAME		•		
RDT&E, N / BA-5			0604512N Shipboard	d Aviatio	n Systems		W9385 Machine Vision Confirmation of Launch Bar Engagement						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost		FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date			Target Value of Contract
Developmental Test & Evaluation	71 -											0.000	
Operational Test & Evaluation												0.000	
Live Fire Test & Evaluation												0.000	
Test Assets												0.000	
Tooling												0.000	
GFE												0.000	
Award Fees												0.000	
Subtotal T&E				0.000	0.00	0	0.0	00	0.000)	0.000	0.000	
Contractor Engineering Support												0.000	
Government Engineering Support												0.000	
Program Management Support												0.000	
Travel												0.000	
Transportation												0.000	
SBIR Assessment												0.000	
Subtotal Management				0.000	0.00	0	0.0	00	0.000)	0.000	0.000	
Remarks:													
Total Cost				0.000	0.00	0	1.4	33	0.000		0.000	1.483	
Remarks:													